

V. Good

8.25
10

Quiz2 (out of 10)

17.5
20

Student name: ..

.....Student ID#:

..... Section:1

NOTES:

1. Show all details of your answer.
2. Return a clean copy (without draft).

Exercise:

Work through the Simplex method step by step to solve the following problem.

$$\begin{cases} \text{Max } Z = 60x_1 + 30x_2 \text{ s.t} \\ 3x_1 + 3x_2 \leq 420 \\ x_1 + 4x_2 \leq 440 \\ x_1 \leq 80 \\ x_1, x_2 \geq 0 \end{cases}$$

$$\begin{aligned} \text{Max } Z &= -60x_1 - 30x_2 &= 0 \\ 3x_1 + 3x_2 + x_3 &= 420 \\ x_1 + 4x_2 + x_4 &= 440 \\ x_1 + x_5 &= 80 \\ x_j &\geq 0, \quad j = 1, 2, 3, 4, 5 \end{aligned}$$

Basic Var	Z	x_1	x_2	x_3	x_4	x_5	Right Side
Z	1	-60	-30	0	0	0	0
x_3	0	3	3	1	0	0	420
x_4	0	1	4	0	1	0	440
x_5	0	1	0	0	0	1	80
Z	1	0	-30	0	0	1	80
x_3	0	0	3	1	0	-3	180
x_4	0	0	4	0	1	-1	360
x_1	0	1	0	0	0	1	80

initial BF?

5.6

	z	x_1	x_2	x_3	x_4	x_5	Right side
z	1	0	0	10	0	-20	1880
x_2	0	0	1	$\frac{1}{3}$	0	-1	60
x_4	0	0	0	$-\frac{4}{3}$	1	3	120
x_1	0	1	0	0	0	1	80

z	1	0	0	$-\frac{26}{9}$	$\frac{29}{3}$	0	3040
x_2	0	0	1	$-\frac{1}{9}$	$\frac{1}{3}$	0	100
x_5	0	0	0	$-\frac{4}{9}$	$\frac{1}{3}$	1	40
x_1	0	1	0	0	0	0	

initial Bf